

ABSTRACTS OF THE INVENTION

[18] A method and device is provided for the microinjection of materials into a cell by using electroosmosis. The invention integrates an electric circuit into a conventional microinjection device and uses an electroosmotic force to propel the flow of fluid inside the injection capillary. The device comprises an electric power supply, output cables, capillary-holding devices, removable electrodes, holding capillary and injection capillary. During microinjection an electric current is delivered to the capillary-holding device from the power supply. The electric current is further directed to the fluid inside the injection capillary through the removable electrodes. The electric current produces an electroosmotic force inside the injection capillary to propel the flow of the fluid inside the injection capillary during microinjection. The fluid flow stops immediately once the electric current is turned off. This invention provides a revolutionary mechanism for the control of the fluid flow during microinjection.